

# Sam Laing

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## INTRODUCTION

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I am a highly motivated individual with a passion for problem solving. I have a strong interest in both the underlying theory and the application of machine learning algorithms. In particular, I am interested in deep learning models and Bayesian machine learning.

## EDUCATION

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### University of Tuebingen

Germany

*MSc. in Machine Learning; **Current Grade Average: 1.48***

*Oct 2022 – Present*

**Relevant coursework:** Deep Learning, Statistical Machine Learning, Probabilistic Machine Learning, Trustworthy Machine learning, Time Series Analysis, Self Driving Cars, Massively Parallel Computing (CUDA Programming), Information Theory

### Trinity College Dublin

Ireland

*BA Mathematics; **First Class Honors (85% average)***

*Sep 2018 – Jun 2022*

## SKILLS

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**Languages:** Python, C++, SQL, R,  $\text{\LaTeX}$ , Prolog,

**Technologies:** PyTorch, Pandas, Git, DuckDB, FastAPI, Azure, JetBrains, SSH, GraphX, Pygame, Numpy, Plotly

**Techniques:** CNNs, RNNs, Transformers, XGBoost, Random Forest Models, Hypothesis Testing, GLMs, Gaussian Processes, Kalman Filter, Deep Q-learning, Imitation Learning, Time Series Forecasting, Bayesian ML,

## EXPERIENCE

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### SoftCo

Dublin, Ireland

*Machine Learning Engineer*

*May 2023 – Present, Part-time*

#### SoftCo

- Was the first employee responsible for Machine Learning at the company
- Designed a Bayesian model to automate a financial matching task delivering significant increases in Purchase Order - Invoice matching rates (90% touchless processing).
- Worked on a number of forecasting tasks to predict volumes of invoices processed per week for each customer of the business
- Designed and developed a Random Forest model to handle a multi-label classification task with a large number of classes
- Helped with the development of a JSON file parser and the building of a data pipeline.
- Communicated frequently with Software Engineers through the Agile Scrum Framework regarding the deployment of models into production, the database architectures and the model APIs.
- Wrote a number of technical reports and documentation of the models in production.

### Trinity College

Dublin, Ireland

*Bachelor's Thesis*

*Sep 2021 - May 2022*

- Wrote a Bachelor's thesis under the supervision of Dr Jack Kelly in which I applied category theoretical techniques (in particular simplicial homotopy theory) to prove several fundamental theorems of algebraic topology. Attached is a copy of the thesis

### Trinity College

Dublin, Ireland

*Undergraduate Researcher*

*Jun 2020 – Aug 2020*

- Conducted research into the Classification of Finite Rings using techniques in commutative algebra and category theory under the supervision of Professor Nicolas Mascot .

### Trinity College

Dublin, Ireland

*Teaching Assistant*

*Sep 2021 – Dec 2021 and Sep 2022 - December 2022*

- Corrected assignments for the advanced Engineering Mathematics course offered at Trinity College Dublin. The topics included Fourier Analysis, Partial Differential Equations and Linear Programming.

### Self Employed

Sep 2019 - June 2022

*Mathematics Tutor*

*Dublin Ireland*

## AWARDS & ACHIEVEMENTS

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**Trinity College Academic Gold Medal:**Awarded to graduating students who achieved over a certain grade point average throughout the four year degree.

**Trinity College Entrance Exhibition Prize:**Awarded to incoming students who achieved over certain points in the entrance examinations (CAO points)

**William Hasslett Memorial Prize:**Awarded to the St Andrew's College student with the best high school grades (in the Leaving Certificate Examinations) (2017)

## HOBBIES

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Jazz Guitar & Piano, Olympic Weightlifting, Cycling, Chess, 8-Ball Pool, Reading

## REFERENCES

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Susan Spence (SoftCo founder) ,